

REMARKS

Brief Summary of the Office Action

Claims 1-35 are pending in this case. Claims 1-32 and 35 are examined and stand rejected under 35 U.S.C. § 102 and § 103. Each of these issues is addressed below.

Amendments

Claims 1 and 35 are amended, and claims 2 and 7 are now cancelled. Support for the present amendment is found in the claims as filed, and particularly in original claim 2. No new matter has been added by the present amendment. Applicant reserves the right to pursue any canceled subject matter in this or in a continuing application.

Rejections under 35 U.S.C. § 102

Claims 1, 3-5, 8-20, and 27 stand rejected under 35 U.S.C. § 102(a) as being anticipated by Dou et al. (U.S. Patent Publication No. 2002015182; hereafter “Dou”). Claims 1-3, 6, 8-20, 27, 29, 30, and 35 stand rejected under 35 U.S.C. § 102(a) as being anticipated by Evans et al. (U.S. Patent Publication No. 20030143165; hereafter “Evans”). Claims 1-6, 8-20, and 29 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Zhao et al. (*Proc. Am. Assoc. Can. Res.* 39:392, 1998; hereafter “Zhao”). Claims 1, 3-5, 8-20, and 27-30 stand rejected under 35 U.S.C. § 102(b) as anticipated by Hersh et al. (U.S. Patent No. 6,337,320; hereafter “Hersh”).

Dou and Hersh Do Not Teach the Treatment of Pre-Cancerous Lesions

Claims 1, 3-5, 8-20, and 27 stand rejected as anticipated by Dou, and claims 1, 3-5, 8-20, and 27-30 stand rejected as anticipated by Hersh. As the basis for anticipation by Dou, the Office states that the reference teaches administering “an effective amount of

polyphenol compounds EGCG (formula I and II in claims 13 and 14), ECG, GCG, or CG from green tea with [a] pharmaceutically acceptable carrier or excipient...for treating cancer such as melanoma of the skin" (Office Action, page 3). As the grounds for anticipation by Hersh, the Office states that Hersh teaches "treating UV radiation-induced skin damage (see Abstract) such as skin cancer (col 1, lines 40-45) with topical compositions (such as an ointment) comprising green tea (claims 6 and 22) and isopropyl myristate (col 17, Example 7)" (Office Action, page 4).

Amended claim 1 now includes the limitation original claim 2 and is directed to a method of treating a *pre-cancerous* lesion of the skin that involves the administration of a therapeutically effective amount of a polyphenol to a patient. Dou and Hersh speak only to the treatment of *cancerous* lesions of the skin (*see* Dou, paragraph 0009 and Hersh, column 1, lines 40-45). Applicant submits that neither Dou nor Hersh teaches the treatment of *pre-cancerous* skin lesions, as apparently acknowledged by the Office as claim 2 is free of this rejection. Because Dou and Hersh do not teach each and every element of claims 1, 3-5, 8-20, and 27-30, the rejections over Dou and Hersh may be withdrawn.

Zhao and Evans Teach Chemoprevention of Skin Diseases and Do Not Teach the Treatment of Pre-Cancerous Skin Lesions

Claims 1-6, 8-20, and 29 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Zhou, and claims 1-3, 6, 8-20, 27, 29, 30, and 35 stand rejected under 35 U.S.C. § 102(a) as being rejected by Evans. As the basis for anticipation by Zhou, the Office states that the reference teaches "treating human volunteers with green tea extracts prior to UVB irradiation result[s] in ...dose-dependent protection against acute erythema formation" (Office Action, page 4). Regarding Evans, the Office states that the reference teaches "treatment of UV light-induced skin cancer, precancerous lesions, and actinic

keratosis (p0031) in mammals...using green tea and a carrier medium” (Office Action, page 3). Applicant submits that both Zhao and Evans teach only the *chemoprevention* of skin diseases and neither teaches the *treatment* of pre-cancerous skin lesions by the administration of polyphenols.

Zhao teaches that pretreatment of *healthy volunteers* with green tea extracts prior to UVB radiation results in the *prevention* of acute erythema formation (lines 5-8). In contrast, the claims are directed to the *treatment* of a patient with an existing pre-cancerous skin lesion.

As a potential mechanism for the ability of tea extracts to prevent UVB-induced acute erythema formation, Zhao states that “tea contains various antioxidative polyphenols which can prevent UVB or PUVA-induced c-fos and p53 expression” (lines 16-19). Applicant submits that there is no indication that such antioxidative polyphenols are able to inhibit or reduce the already heightened expression of an oncogene in a pre-cancerous lesion.

The other reference, Evans, discloses only the use of green tea for the *prevention of skin cancer*:

Agents that have been found in studies to hold promise for cancer *chemoprevention* include vitamin A and green tea for skin cancer...One group of drugs that has also been researched as potential chemopreventive agents are the non-steroidal anti-inflammatory drugs (“NSAIDs”) (page 1, paragraph 0013, emphasis added).

The remaining disclosure in Evans is focused on the use of NSAIDs as chemopreventive agents (*see* paragraphs 0016, 0017, 0027, and 0030, as well as paragraph 0031, concerning the topical use of flurbiprofen as an example of an NSAID used in the prevention or treatment of skin diseases), but *not* the use of green tea extract. Because Zhao and Evans fail to teach each and every element of claims 1, 3-6, 8-20, 27, 29, 30, and 35, the rejections over Zhao and Evans may be withdrawn.

Rejections under 35 U.S.C. § 103

Claims 1, 3-5, and 7-27 are rejected under 35 U.S.C. § 103(a) as being obvious in view of Dou. Claims 1, 3-5, 7-27, 31, and 32 are rejected under 35 U.S.C. § 103(a) as being obvious over Dou in view of Sheffield (U.S. Patent Publication No. 20020031535; hereafter “Sheffield”). Claims 1-3, 6, 8-27, 29, 30, and 35 are rejected under 35 U.S.C. § 103(a) as obvious in view of Evans. Claims 1, 3-5, 8-20, and 27-30 are rejected under 35 U.S.C. § 103(a) as obvious in view of Hersh. Claims 1-6, 8-27, and 29 are rejected under 35 U.S.C. § 103(a) as obvious in view of Zhao.

*Dou Considered Alone or in Combination
with Sheffield Does Not Teach or Suggest
the Treatment of Pre-Cancerous Lesions
of the Skin*

Claims 1, 3-5, and 7-27 stand rejected as obvious in view of Dou, and claims 1, 3-5, 7-27, 31, and 32 stand rejected as obvious over Dou in view of Sheffield. As the basis for these rejections, the Office states that Dou teaches “administering to the patient an effective amount of polyphenol compounds...from green tea with [a] pharmaceutically acceptable carrier or excipient” (Office Action, page 5) and further states that “it would have been *prima facie* obvious for one of ordinary skill in the art at the time of the invention was made to use the inventions of Dou et al. since it yielded beneficial results in skin cancer treatment” (Office Action, page 5). The Office states that Sheffield teaches that “skin cancer may be removed by excisional surgery, curettage-electrodesiccation, cryosurgery, radiation therapy, [and] topical chemotherapy” (Office Action, page 9) and further states that “one of ordinary skill in the art would have been motivated to...combine the curettage with a topical formulation to effectively treat skin cancer” (Office Action, page 9).

As indicated above, amended claim 1 now includes the limitation of claim 2, a

claim found to be free of this rejection. Consistent with this acknowledgement by the Office, neither Dou nor Sheffield teaches the treatment of a *pre-cancerous* lesion of the skin. Dou teaches only the treatment of *cancerous* lesions of the skin (*see* Dou, paragraph 0009). Sheffield does not speak to the treatment of pre-cancerous lesions of the skin, and therefore fails to cure the deficiency of Dou. Because Dou considered individually or in combination with Sheffield fails to teach or suggest all the limitations of claims 1, 3-5, 8-27, 31, and 32, the rejections may be withdrawn.

Hersh Does Not Teach or Suggest the Treatment of a Pre-Cancerous Skin Lesion

Claims 1, 3-5, 8-20, and 27-30 stand rejected as obvious in view of Hersh. As the basis for the rejection, the Office states that Hersh teaches “treating UV radiation-induced skin damage (see Abstract) such as skin cancer (col 1, lines 40-45) with topical compositions (such as an ointment) comprising green tea (claims 6 and 22) and isopropyl myristate” (Office Action, page 8) and states that “it would have been *prima facie* obvious for one of ordinary skill in the art at the time the invention was made to use the inventions of Hersh et al. since it yielded beneficial results in skin cancer treatment” (Office Action, page 8).

As recited above, Hersh does not teach or suggest the treatment of a *pre-cancerous* lesion of the skin. Hersh speaks only to the treatment of *cancerous* lesions of the skin (*see* Hersh, column 1, lines 40-45). Again, the Office apparently agrees, as claim 2 (the limitation of which is now incorporated into independent claim 1) was found to be free of this rejection. Because Hersh fails to teach or suggest each and every element of amended claims 1, 3-5, 8-20, and 27-30, the rejection over Hersh may be withdrawn.

*Evans Teaches Chemoprevention of
Skin Cancer and Does Not Teach or
Suggest the Treatment of Pre-Cancerous
Skin Lesions*

Claims 1-3, 6, 8-27, 29, 30, and 35 stand rejected as obvious in view of Evans. As the basis for this rejection, the Office states that Evans teaches “topical...treatment of UV light-induced skin cancer, precancerous lesions, and actinic keratosis (p0031) in mammals...using green tea and a carrier medium” (Office Action, page 6) and further states “it would have been *prima facie* obvious for one of ordinary skill in the art at the time the invention was made to use the inventions of Evans et al. since it yielded beneficial results in skin cancer treatment” (Office Action, page 6).

Applicant submits that Evans teaches only the *prevention of skin cancer* and does not teach or suggest the methods of amended claims 1, 3, 6, 8-27, 29, 30, and 35, directed to the *treatment* of a patient who has a *pre-cancerous* lesion of the skin. Evans discloses only the use of green tea for the *prevention of skin cancer* (see page 1, paragraph 0013). As indicated above, preventive care of a healthy subject differs therapeutically from the treatment of a patient already suffering from a pre-cancerous lesion of the skin. Because Evans does not teach or suggest each and every element of claims 1, 3, 6, 8-27, 29, 30, and 35, Applicant respectfully requests that the rejection be withdrawn.

*Zhao Only Teaches Chemoprevention of Acute
Erythema Formation and Does Not Teach or
Suggest the Treatment of Pre-Cancerous
Skin Lesions*

Claims 1-6, 8-27, and 29 are rejected under 35 U.S.C. § 103(a) as obvious in view of Zhao. As the basis for this rejection, the Office states that Zhao teaches “topically treating human volunteers with green tea extracts prior to UVB irradiation resulted in a dose-dependent protection against acute erythema formation” (Office Action, page 7) and

that “it would have been *prima facie* obvious for one of ordinary skill in the art at the time the invention was made to use the inventions of Zhao et al. since it provides scientific data for skin cancer treatment” (Office Action, page 7). Applicant respectfully disagrees.

As recited above, Zhao teaches only that pretreatment of *healthy volunteers* with green tea extracts prior to UVB radiation results in the *prevention* of acute erythema formation (see lines 5-8). As further discussed above, nothing in Zhao indicates that the mechanisms allowing for *prevention* of erythema formation by antioxidative polyphenols would be similarly involved once pre-cancerous lesion formation had occurred, or that preventive treatments would be effective for *treatment* of *established* pre-cancerous lesions. As the amended claims are directed to the treatment of a patient with an existing pre-cancerous skin lesion, Zhao cannot render these claims obvious. This rejection of claims 1, 3-6, 8-27, and 29 should be withdrawn.

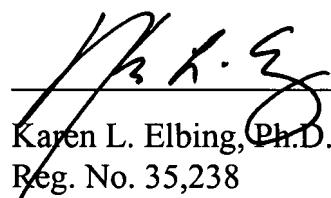
CONCLUSION

Applicant submits that the claims are now in condition for allowance, and such action is respectfully requested.

If there are any charges or any credits, please apply them to Deposit Account No. 03-2095.

Respectfully submitted,

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